palbit

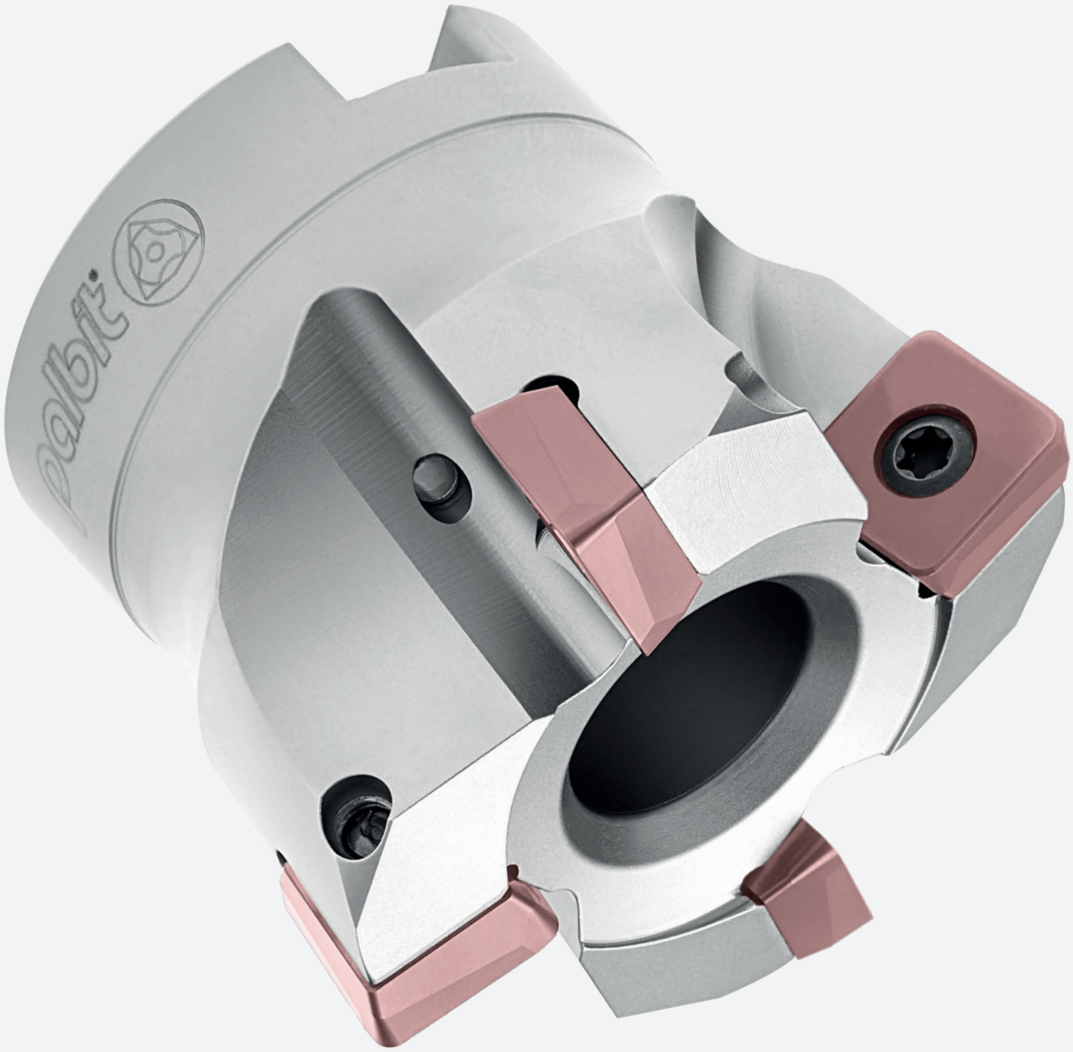
MILLING

Facing | Profiling | Copying

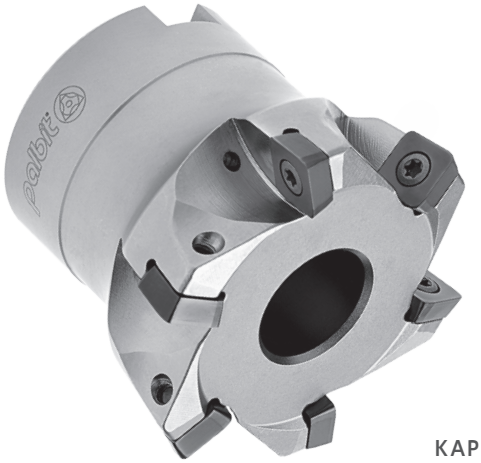
06410 | 06690 | 06815

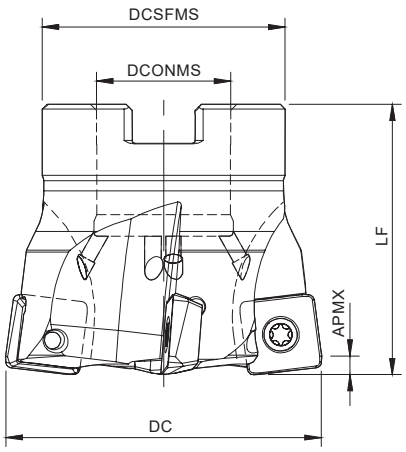
HIFEED

The best solution for high productivity milling



SINCE 1916



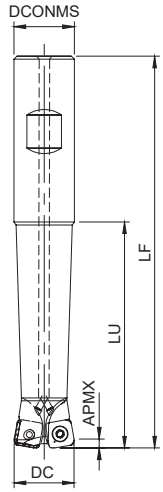


Arbor Mounting

KAPR=10° | GAMP=+2° | GAMF =+2° | RP=2,0

Order code Código	Reference Referência Referencia	CICT	Dimensions | Dimensões | Dimensiones (mm)				WT	Specifications		Insert Pastilha Inserto	Stock
			DC	DCONMS	DCSFMS	LF		Arbor Type	APMX (mm)		
181149800	040A06410-05-02-016040	5	40	16	30	40	0,157	A	1,00	SO...0803...	◎
181153200	050A06410-06-02-022045	6	50	22	40	45	0,312	A	1,00	SO...0803...	◎
181149900	052A06410-06-02-022045	6	52	22	40	45	0,331	A	1,00	SO...0803...	◎

◎ Stock item | Produto de stock | Itens de stock ○ Available under request | Disponível sobre consulta | Disponible bajo consulta



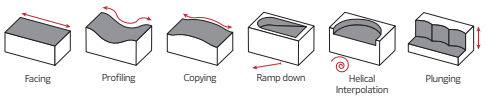
Weldon Shank

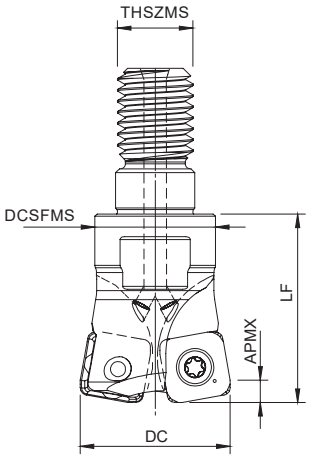
KAPR=10° | GAMP=+2° | GAMF =+2° | RP=2,0

Order code Código	Reference Referência Referencia	CICT	Dimensions | Dimensões | Dimensiones (mm)				WT	Specifications	Insert Pastilha Inserto	Stock
			DC	DCONMS	LF	LU		APMX (mm)		
181076300	020W06410-02-02-020130	2	20	20	130	75	0,360	1,00	SO...0803...	◎
181080900	020W06410-02-02-020190	2	20	20	190	110	0,340	1,00	SO...0803...	◎
181076400	025W06410-03-02-025140	3	25	25	140	80	0,410	1,00	SO...0803...	◎
181081100	025W06410-03-02-025200	3	25	25	200	130	0,570	1,00	SO...0803...	◎
181076500	032W06410-04-02-032150	4	32	32	150	90	0,760	1,00	SO...0803...	◎
181081300	032W06410-04-02-032200	4	32	32	200	130	1,010	1,00	SO...0803...	◎

◎ Stock item | Produto de stock | Itens de stock ○ Available under request | Disponível sobre consulta | Disponible bajo consulta

HIFEED 06410
SOEW 08 | SOET 08





Threaded Coupling

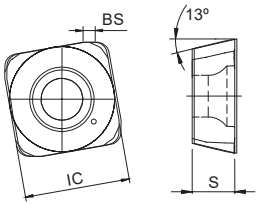
KAPR=10° | GAMP=+2° | GAMF =+2° | RP=2,0

Order code Código	Reference Referência Referencia	CICT	Dimensions | Dimensões | Dimensiones (mm)				WT	Specifications	Insert Pastilha Inserto	Stock
			DC	THSZMS	DCSFMS	LF		APMX (mm)		
181071900	020R06410-02-02-M10025	2	20	M10	16	25	0,040	1,00	SO...0803...	◈
181076600	025R06410-03-02-M12028	3	25	M12	21	28	0,070	1,00	SO...0803...	◈
181076700	032R06410-04-02-M16035	4	32	M16	29	35	0,160	1,00	SO...0803...	◈
181076800	035R06410-04-02-M16035	4	35	M16	29	35	0,180	1,00	SO...0803...	◈
181076900	042R06410-05-02-M16035	5	42	M16	29	35	0,220	1,00	SO...0803...	◈

◈ Stock item | Produto de stock | Itens de stock ◯ Available under request | Disponível sobre consulta | Disponible bajo consulta

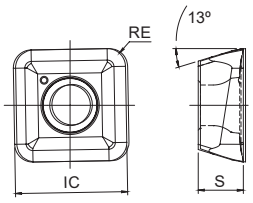
SO...0803... Inserts | Pastilhas | Plaquitas

SOEW



SOEW

SOET



SOET

(1) Geometry code	ISO Reference	P			M			K			S			Dimensions Dimensões Dimensiones (mm)			
	(2) Grade code	X5	T1	G6	X9	4H	G6	X5	T1	G6	X9	4H	G6	IC	S	RE	BS
		PVD			PVD			PVD			PVD						
		PHP910	PHP920	PH7740	PHH930	PHF530	PH7740	PHP910	PHP920	PH7740	PHH930	PHF530	PH7740				
1111884	SOEW 080310 S	◈	◈					◈	◈					8,60	3,47	1,0	1,0
1112149	SOET 080315-MS			◈	◈	◈	◈			◈	◈	◈	◈	8,60	3,47	1,5	-

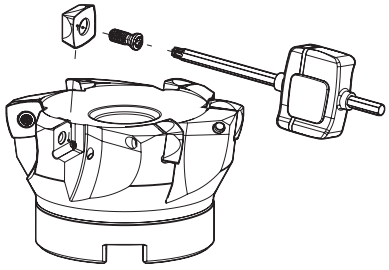
◈ First choice | Primeira opção | 1ª opción ◈ Stock item | Produto de stock | Itens de stock ◯ Available under request | Disponível sobre consulta Disponible bajo consulta

Insert order code = (1) Geometry Code + (2) Grade Code

SPARE PARTS Acessórios | Repuestos

Order separately

Cutter DC	Insert Screw	Key (Torx)	Key (Torx - Nm)	Torque Value
				Nm
A06410 – 40 - 52	P0300800	XT09	DT0914	1,4
R06410 – 20 - 42	P0300800	XT09	DT0914	1,4
W06410 – 20 - 32	P0300800	XT09	DT0914	1,4



GRADES SELECTION GUIDE Guia para selecção de graus | Tabla para selección de calidades

ISO	PSM	Material	HB (Brinell)	Grades ← Wear Resistance — Toughness → PHP910	PHP920	PHH930	PHF530	PH7740
P	1	Unalloyed Steel	125-220	✓	✓			✓
	2	Low-Alloyed Steel	220-280	✓	✓			✓
	3	High-Alloyed Steel	280-380	✓	✓			✓
M	4	SS - Ferritic / Martensitic	200-330			✓	✓	✓
	5	SS - Austenitic	200-330			✓	✓	✓
	6	SS - Austenitic-ferritic (Duplex)	230-260			✓	✓	✓
K	7	Malleable Cast Iron	130-230	✓	✓			✓
	8	Grey Cast Iron	180-245	✓	✓			✓
	9	Nodular Cast iron	160-250	✓	✓			✓
S	11	Heat Resistant Super Alloys	200-320			✓	✓	✓

Good Conditions Average Conditions Difficult Conditions

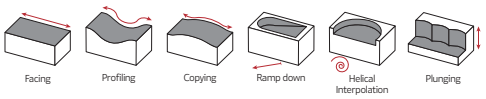
RECOMMENDED CUTTING CONDITIONS Condições de corte recomendadas | Condiciones de corte recomendables

ISO	PSM	Material	HB (Brinell)	Vc (m/min) ← Wear Resistance — Toughness → PHP910	PHP920	PHH930	PHF530	PH7740	Feed fz (mm/t) SOEW 08...	SOET 08...
P	1	Unalloyed Steel	125-220	180-250	180-250	-	-	140-200	0,40-1,80	0,40-1,80
	2	Low-Alloyed Steel	220-280	160-240	160-230	-	-	130-180	0,40-1,80	-
	3	High-Alloyed Steel	280-380	140-230	140-220	-	-	100-170	0,40-1,50	-
M	4	SS - Ferritic / Martensitic	200-330	-	-	140-210	140-250	130-180	-	0,40-1,30
	5	SS - Austenitic	200-330	-	-	120-170	130-240	110-160	-	0,40-1,30
	6	SS - Austenitic-ferritic (Duplex)	230-260	-	-	100-150	120-220	90-150	-	0,10-1,00
K	7	Malleable Cast Iron	130-230	180-300	160-270	-	-	-	0,40-1,80	0,40-1,80
	8	Grey Cast Iron	180-245	160-250	140-250	-	-	-	0,40-1,80	-
	9	Nodular Cast iron	160-250	150-210	120-210	-	-	-	0,40-1,80	-
S	11	Heat Resistant Super Alloys	200-320			30-110	30-150	30-100	-	0,40-1,00

(Note 1) Cutting conditions a_e/Dc=70%.

(Note 2) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:
- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

(Note 3) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:
- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

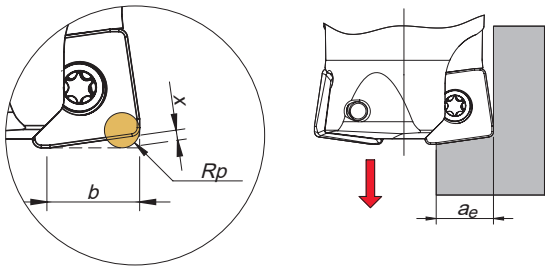


CHIP BREAKER SELECTION GUIDE Guia para aplicações do quebra-aparas | Guía para aplicación del rompevirutas

ISO	PSM	Material	HB (Brinell)	Chip breaker application	
				1st choice	Dificult Operations
P	1	Unalloyed Steel	125-220	SOET 08...	SOEW 08...
	2	Low-Alloyed Steel	220-280	SOEW 08...	-
	3	High-Alloyed Steel	280-380	SOEW 08...	-
M	4	SS - Ferritic / Martensitic	200-330	SOET 08...	-
	5	SS - Austenitic	200-330	SOET 08...	-
	6	SS - Austenitic-ferritic (Duplex)	230-260	SOET 08...	-
K	7	Malleable Cast Iron	130-230	SOET 08...	SOEW 08...
	8	Grey Cast Iron	180-245	SOEW 08...	-
	9	Nodular Cast iron	160-250	SOEW 08...	-
S	11	Heat Resistant Super Alloys	200-320	SOET 08...	-

PROGRAMMING DATA Dados para programação | Datos para la programación

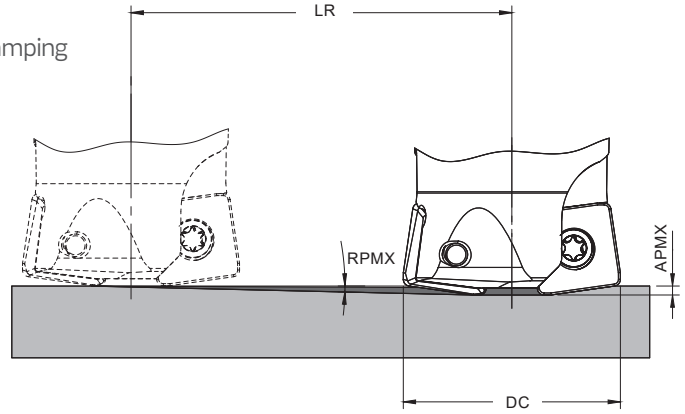
Insert	Programming Data			
	Rp	X	b	a_e
SO... 0803..	2,0	0,8	6,8	6,3



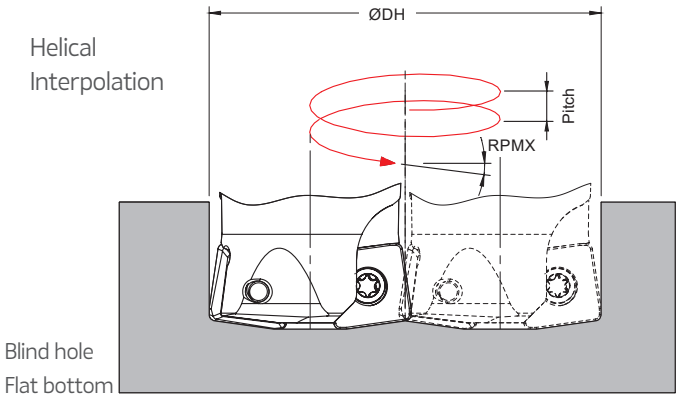
RAMPING AND HELICAL INTERPOLATION

Descida em rampa e interpolação helicoidal | Bajada en rampa e interpolación circular

Ramping



Helical Interpolation

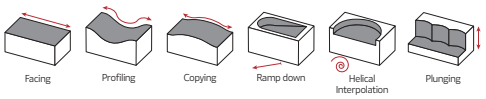


Blind hole
Flat bottom

ØDi = ØDH - DC

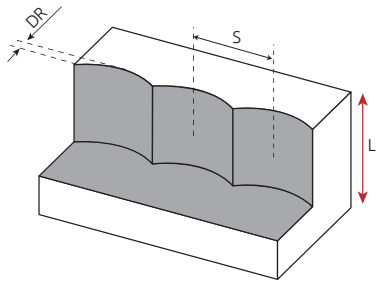
DC	Ramping			Helical Interpolation		
	RPMX	APMX	Min LR	ØDHmin	ØDHmax	Max Pitch/Rev.
20	15	1,0	3,2	26,4 -	- 38,0	6 17
25	9,5	1,0	6,0	36,4	- 48,0	5 12
32	5,5	1,0	10,4	50,4 -	- 62,0	5 9
35	4,5	1,0	12,7	56,4 -	- 68,0	5 8
40	3,5	1,0	16,3	66,4 -	- 80,0	5 7
42	3,5	1,0	16,3	70,4 -	- 82,0	5 7
50	3,5	1,0	16,3	86,4 -	- 100,0	6 9
52	3,5	1,0	16,3	90,4 -	- 104,0	7 9

Note: During helical interpolation do not exceed APMX.



PLUNGING Mergulho | Plunge

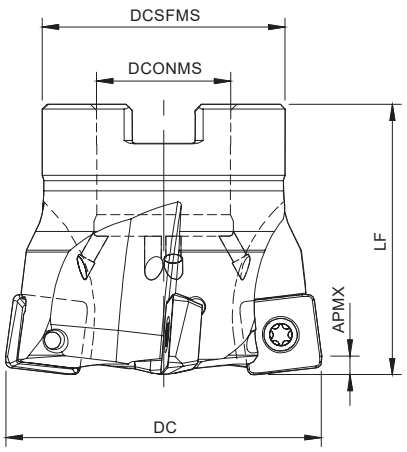
L≤3DC	L>3DC	S max.
f_z (mm/t)		
0,08-0,15	0,05-0,10	$Smax = \sqrt{DC.DR-DR^2}$



S max and DR corrsponding cutting diameter DC (mm)								
DR (mm)	DC (mm)							
	20	25	32	35	40	42	50	52
1,0	4,4	4,9	5,6	5,8	6,2	6,4	7,0	7,1
2,0	6,0	6,8	7,7	8,1	8,7	8,9	9,8	10,0
3,0	7,1	8,1	9,3	9,8	10,5	10,8	11,9	12,1
4,0	8,0	9,2	10,6	11,1	12,0	12,3	13,6	13,9
5,0	8,7	10,0	11,6	12,2	13,2	13,6	15,0	15,3
6,0	9,2	10,7	12,5	13,2	14,3	14,7	16,2	16,6

Note: Recommended for L ≤ 4 Dc for extra long tool this step and side cut must be reduced.

HIFEED 06690



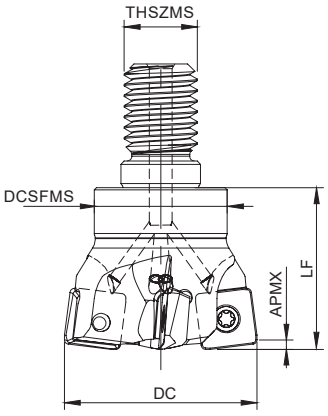
Arbor Mounting

KAPR=10º | GAMP=+5º | RP=2,5

Order code Código	Reference Referência Referencia	CICT	Dimensions | Dimensões | Dimensiones (mm)				WT	Specifications		Insert Pastilha Inserto	Stock
			DC	DCONMS	DCSFMS	LF		Arbor Type	APMX (mm)		
181069100	050A06690-04-05-022045	4	50	22	40	45	0,274	A	1,50	SO...13M5...	◈
181111100	050A06690-05-05-022045	5	50	22	40	45	0,272	A	1,50	SO...13M5...	◈
181029800	052A06690-04-05-022045	4	52	22	40	45	0,290	A	1,50	SO...13M5...	◈
181033500	063A06690-05-05-027050	5	63	27	48	50	0,500	A	1,50	SO...13M5...	◈
181029900	066A06690-05-05-027050	5	66	27	48	50	0,550	A	1,50	SO...13M5...	◈
181030000	080A06690-06-05-027050	6	80	27	60	50	0,955	A	1,50	SO...13M5...	◈
181113100	100A06690-08-05-032050*	8	100	32	70	50	1,500	A	1,50	SO...13M5...	◈

◈ Stock item | Produto de stock | Itens de stock ◯ Available under request | Disponível sobre consulta | Disponible bajo consulta

* For shank assembly a DIN 6912 screw is needed.

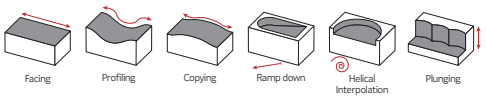


Threaded Coupling

KAPR=10º | GAMP=+5º | RP=2,5

Order code Código	Reference Referência Referencia	CICT	Dimensions | Dimensões | Dimensiones (mm)				WT	Specifications	Insert Pastilha Inserto	Stock
			DC	THSZMS	DCSFMS	LF		APMX (mm)		
181038700	032R06690-03-05-M16035	3	32	M16	29	35	0,145	1,50	SO...13M5	◈
181064600	035R06690-03-05-M16035	3	35	M16	29	35	0,163	1,50	SO...13M5	◈
181038800	042R06690-04-05-M16035	4	42	M16	29	35	0,194	1,50	SO...13M5	◈

◈ Stock item | Produto de stock | Itens de stock ◯ Available under request | Disponível sobre consulta | Disponible bajo consulta

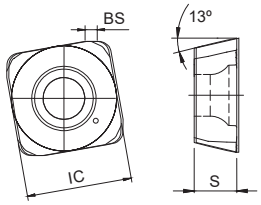


SO...13M5... Inserts | Pastilhas | Plaquitas


SOEW

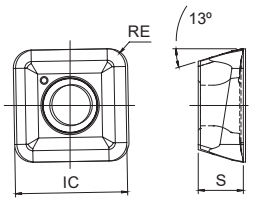

SOEW-MD


NEW SOEW-MP



SOEW


SOET-MS



SOET

		P			M			K			S			Dimensions Dimensões Dimensiones (mm)			
		PVD			PVD			PVD			PVD						
	(2) Grade code	X5	T1	G6	X9	4H	G6	X5	T1	G6	X9	4H	G6				
(1) Geometry code	ISO Reference	PHP910	PHP920	PH7740	PHH930	PHF530	PH7740	PHP910	PHP920	PH7740	PHH930	PHF530	PH7740	IC	S	RE	BS
1111906	SOEW 13M510 S	◉	◉	◉				◉	◉	◉				12,43	5,00	1,20	1,0
1112813	SOEW 13M510-MD		◉						◉					12,43	5,00	1,20	1,0
1113533	SOEW 13M520-MP		◉						◉					12,45	5,00	2,00	1,0
1112147	SOET 13M520-MS	○		◉	◉	◉	◉			◉	◉	◉	◉	12,43	5,00	2,00	-

◉ First choice | Primeira opção | 1ª opción ◉ Stock item | Produto de stock | Itens de stock ○ Available under request | Disponível sobre consulta Disponible bajo consulta

Insert order code = (1) Geometry Code + (2) Grade Code

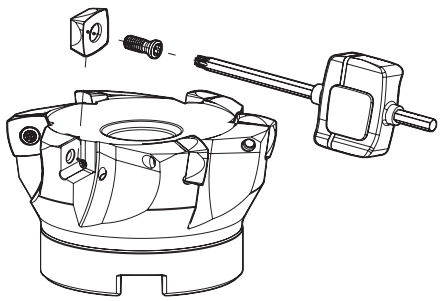
CHIP BREAKERS Quebra-aparas | Rompevirutas

Chip Breaker	Features | Características | Características
Geometry S	Stronger edge preparation for unstable conditions and difficult to machine steels.
Geometry MD	General application.
Geometry MP	General application on steel and cast iron.
Geometry MS	First choice for stainless steel and HRSA.

SPARE PARTS Acessórios | Repuestos

Order separately

Cutter DC	Insert Screw	Key (Torx)	Key (Torx - Nm)	Torque Value	Retaining Screw
R06690 – 32 - 42	P0401200	XT15	DT1530	3,0	-
A06690 – 50 - 80	P0401200	XT15	DT1530	3,0	-
A06690 – 100	P0401200	XT15	DT1530	3,0	D1603500



GRADES SELECTION GUIDE Guia para selecção de graus | Tabla para selección de calidades

ISO	PSM	Material	HB (Brinell)	Grades ← Wear Resistance — Toughness →				
				PHP910	PHP920	PHH930	PHF530	PH7740
P	1	Unalloyed Steel	125-220	✓	✓			✓
	2	Low-Alloyed Steel	220-280	✓	✓			✓
	3	High-Alloyed Steel	280-380	✓	✓			✓
M	4	SS - Ferritic / Martensitic	200-330			✓	✓	✓
	5	SS - Austenitic	200-330			✓	✓	✓
	6	SS - Austenitic-ferritic (Duplex)	230-260			✓	✓	✓
K	7	Malleable Cast Iron	130-230	✓	✓			✓
	8	Grey Cast Iron	180-245	✓	✓			✓
	9	Nodular Cast iron	160-250	✓	✓			✓
S	11	Heat Resistant Super Alloys	200-320			✓	✓	✓

Good Conditions Average Conditions Difficult Conditions

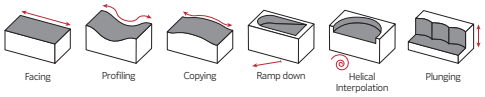
RECOMMENDED CUTTING CONDITIONS Condições de corte recomendadas | Condiciones de corte recomendables

ISO	PSM	Material	HB (Brinell)	Vc (m/min) ← Wear Resistance — Toughness →					Feed fz (mm/t)			
				PHP910	PHP920	PHH930	PHF530	PH7740	SOEW S	SOEW MD	SOEW MP	SOET MS
P	1	Unalloyed Steel	125-220	180-250	180-250	-	-	140-200	0,50-2,10	0,50-2,20	0,50-2,20	0,50-2,10
	2	Low-Alloyed Steel	220-280	160-240	160-230	-	-	130-180	0,50-2,10	0,50-2,20	0,50-2,20	-
	3	High-Alloyed Steel	280-380	140-230	140-220	-	-	100-170	0,50-2,00	0,50-2,10	0,50-2,10	-
M	4	SS - Ferritic / Martensitic	200-330	-	-	140-210	140-250	130-180	-	-	-	0,50-1,80
	5	SS - Austenitic	200-330	-	-	120-170	130-240	110-160	-	-	-	0,50-1,80
	6	SS - Austenitic-ferritic (Duplex)	230-260	-	-	100-150	120-220	90-150	-	-	-	0,50-1,50
K	7	Malleable Cast Iron	130-230	180-300	160-270	-	-	140-220	0,50-2,10	0,50-2,20	0,50-2,20	0,50-2,10
	8	Grey Cast Iron	180-245	160-250	140-250	-	-	120-210	0,50-2,10	0,50-2,20	0,50-2,20	-
	9	Nodular Cast iron	160-250	150-210	120-210	-	-	100-190	0,50-2,10	0,50-2,20	0,50-2,20	-
S	11	Heat Resistant Super Alloys	200-320	-	-	30-110	30-150	30-100	-	-	-	0,40-1,30

(Note 1) Cutting conditions $a_e/Dc=70\%$.

(Note 2) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:
- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

(Note 3) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:
- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

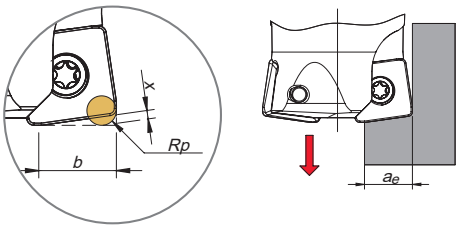


CHIP BREAKER SELECTION GUIDE Guia para aplicações do quebra-aparas | Guía para aplicación del rompevirutas

ISO	PSM	Material	HB (Brinell)	Chip breaker application	
				1st choice	Dificult Operations
P	1	Unalloyed Steel	125-220	SOEW-MP	SOEW-S
	2	Low-Alloyed Steel	220-280	SOEW-MP	SOEW-S
	3	High-Alloyed Steel	280-380	SOEW-MP	SOEW-S
M	4	SS - Ferritic / Martensitic	200-330	SOET-MS	-
	5	SS - Austenitic	200-330	SOET-MS	-
	6	SS - Austenitic-ferritic (Duplex)	230-260	SOET-MS	-
K	7	Malleable Cast Iron	130-230	SOET-MS	SOEW-S
	8	Grey Cast Iron	180-245	SOEW-MP	SOEW-S
	9	Nodular Cast iron	160-250	SOEW-MP	SOEW-S
S	11	Heat Resistant Super Alloys	200-320	SOET-MS	-

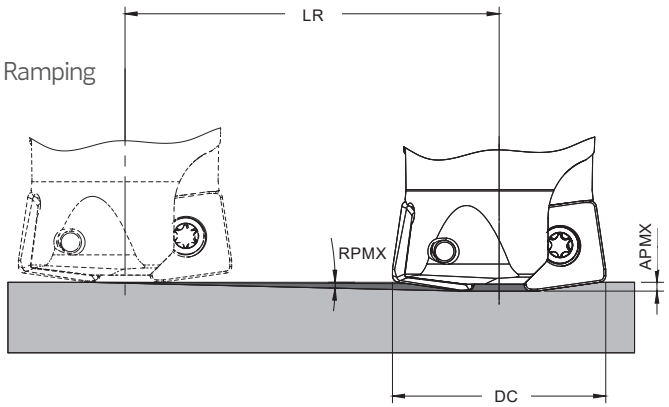
PROGRAMMING DATA Dados para programação | Datos para la programación

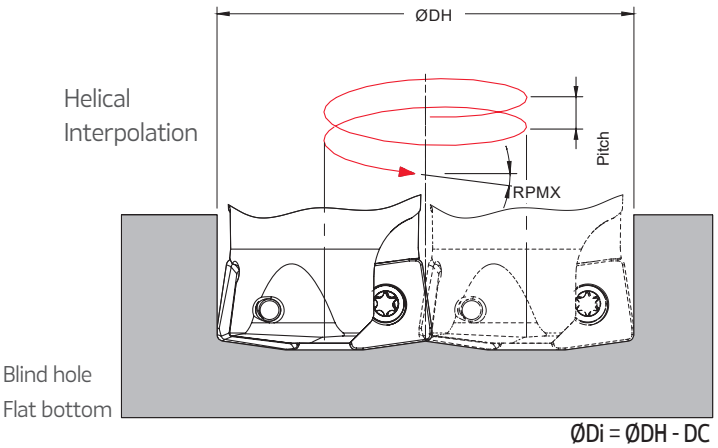
Insert	Programming Data			
	Rp	X	b	a_e
SO... 13M5..	2,5	1,1	10,5	10,0
SOEW 13M520-MP	3,0	0,9	9,2	8,7



RAMPING AND HELICAL INTERPOLATION

Descida em rampa e interpolação helicoidal | Bajada en rampa e interpolación circular

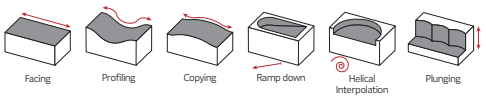




ØDi = ØDH - DC

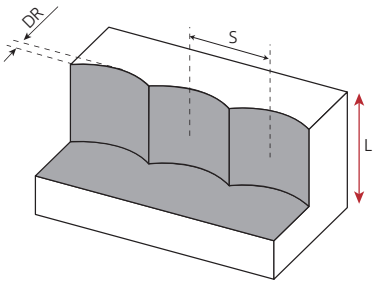
DC	Ramping			Helical Interpolation		
	RPMX	APMX	Min LR	ØDHmin	ØDHmax	Max Pitch/Rev.
32	10,0	1,5	6,0	43 -	- 62,0	6 16
35	9,0	1,5	9,5	49 -	- 68,0	6 16
42	6,4	1,5	13,4	63 -	- 82,0	7 14
50	4,3	1,5	19,9	79 -	- 98,0	6 11
52	4,0	1,5	21,5	83 -	- 102,0	6 10
63	3,0	1,5	28,6	105 -	- 124,0	6 10
66	2,6	1,5	33,0	111 -	- 130,0	6 9
80	2,0	1,5	43,0	139 -	- 158,0	6 8
100	1,0	1,5	85,9	179 -	- 198,0	4 5

Note: During helical interpolation do not exceed APMX.



PLUNGING Mergulho | Plunge

L≤3DC	L>3DC	S max.
f_z (mm/t)		
0,10-0,20	0,07-0,14	$Smax = \sqrt{DC.DR-DR^2}$



S max and DR corresponding cutting diameter DC (mm)								
DR (mm)	DC (mm)							
	32	35	42	50	52	63	66	80
1,0	5,6	5,8	6,4	7,0	7,1	7,9	8,1	8,9
2,0	7,7	8,1	8,9	9,8	10,0	11,0	11,3	12,5
3,0	9,3	9,8	10,8	11,9	12,1	13,4	13,7	15,2
4,0	10,6	11,1	12,3	13,6	13,9	15,4	15,7	17,4
5,0	11,6	12,2	13,6	15,0	15,3	17,0	17,5	19,4
6,0	12,5	13,2	14,7	16,2	16,6	18,5	19,0	21,1
7,0	13,2	14,0	15,7	17,3	17,7	19,8	20,3	22,6
8,0	13,9	14,7	16,5	18,3	18,8	21,0	21,5	24,0
9,0	14,4	15,3	17,2	19,2	19,7	22,0	22,6	25,3
10,0	14,8	15,8	17,9	20,2	20,5	23,0	23,7	26,5

Note: Recommended for L ≤ 4 Dc for extra long tool this step and side cut must be reduced.

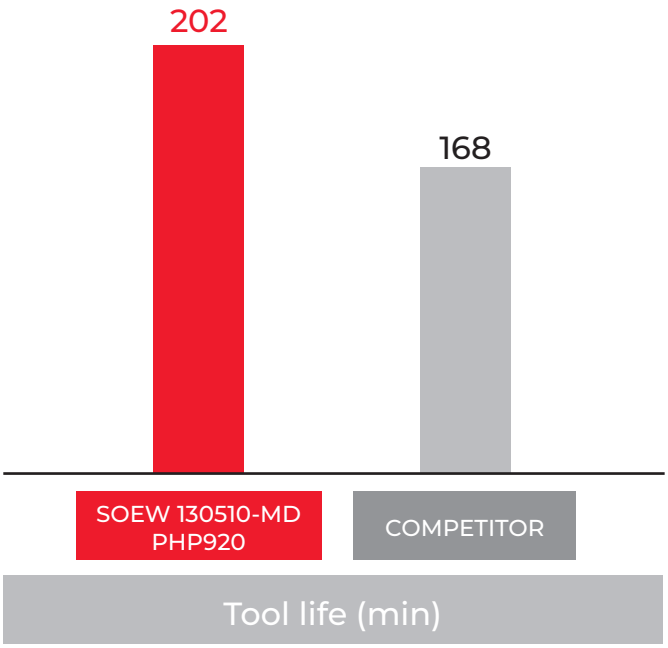
TEST REPORT Relatório de Teste | Informe de Prueba

Insert SOEW 13M510-MD (ISO)

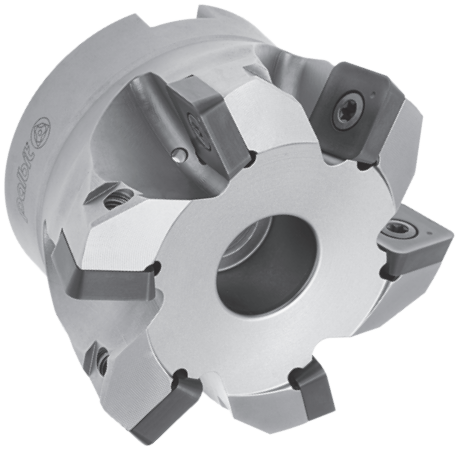
Grade PHP920

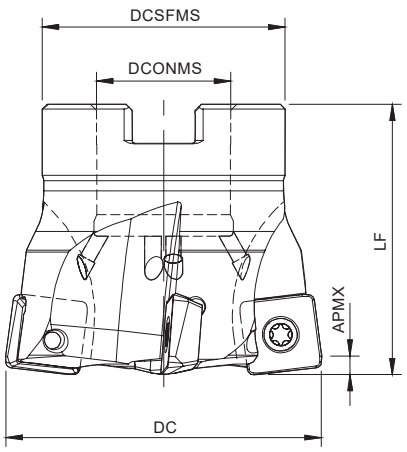
Workpiece material: 1.2738 Steel (38 HRC)

Cutting speed: V_c	160 m/min
Feed per tooth: f_z	1,3 mm/tooth
Depth of cut: APMX	1,30 mm
Stepover : a_e	65%
Operation	Face milling
Coolant	Air



HIFEED 06815





Arbor Mounting

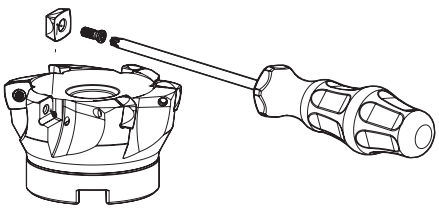
KAPR=15° | GAMP=+2° | RP=4,5

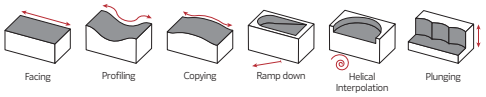
Order code Código	Reference Referência Referencia	CICT	Dimensions | Dimensões | Dimensiones (mm)				WT	Specifications		Insert Pastilha Inserto	Stock
			DC	DCONMS	DCSFMS	LF		Arbor Type	APMX (mm)		
181100400	063A06815-05-02-027050	5	63	27	48	50	0,460	A	3,50	SO...1605...	◈
181081900	066A06815-05-02-027050	5	66	27	48	50	0,500	A	3,50	SO...1605...	◈
181082000	080A06815-06-02-027050	6	80	27	60	50	0,900	A	3,50	SO...1605...	◈
181082100	100A06815-08-02-032050	8	100	32	80	50	1,600	B	3,50	SO...1605...	◈
181082200	125A06815-10-02-040063	10	125	40	90	63	2,900	B	3,50	SO...1605...	◈
181082300	160A06815-12-02-U040063	12	160	40	110	63	4,400	C	3,50	SO...1605...	◈

◈ Stock item | Produto de stock | Itens de stock ◯ Available under request | Disponível sobre consulta | Disponible bajo consulta

SPARE PARTS Acessórios | Repuestos

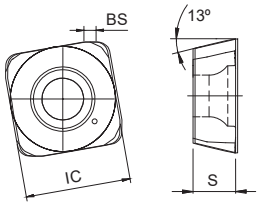
Cutter DC	Insert Screw	Key (Torx)	Order separately Key (Torx - Nm)	Torque Value	Order separately Screw	DIN 6368 Wrench
A06815 - 63-80	P0501302	PT20	DT2050	5,0	-	-
A06815 - 100	P0501302	PT20	DT2050	5,0	J0123510	SD6368-12
A06815 – 125	P0501302	PT20	DT2050	5,0	J0164110	SD6368-16
A06815 – 160	P0501302	PT20	DT2050	5,0	-	-





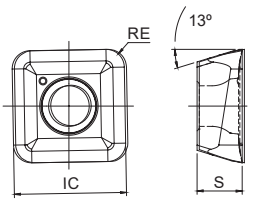
SO...1605... Inserts | Pastilhas | Plaquitas

SOEW



SOEW

SOET



SOET

		P			M		K			S		Dimensions Dimensões Dimensiones (mm)			
		PVD			PVD		PVD			PVD					
	(2) Grade code	X5	T1	G6	X9	G6	X5	T1	G6	X9	G6				
(1) Geometry code	ISO Reference	PHP910	PHP920	PH7740	PHH930	PH7740	PHP910	PHP920	PH7740	PHH930	PH7740	IC	S	RE	BS
1111907	SOEW 160512 S	●	●	●		●	●	●	●			16,40	5,26	1,20	1,50
1112221	SOET 160520-MS			●	●	●			●	●	●	16,40	5,26	2,00	-

● First choice | Primeira opção | 1ª opción

● Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta
Disponible bajo consulta

Insert order code = (1) Geometry Code + (2) Grade Code

GRADES SELECTION GUIDE Guia para selecção de graus | Tabla para selección de calidades

ISO	PSM	Material	HB (Brinell)	Grades ← Wear Resistance — Toughness → PHP910	PHP920	PHH930	PH7740
P	1	Unalloyed Steel	125-220	✓	✓		✓
	2	Low-Alloyed Steel	220-280	✓	✓		✓
	3	High-Alloyed Steel	280-380	✓	✓		✓
M	4	SS - Ferritic / Martensitic	200-330			✓	✓
	5	SS - Austenitic	200-330			✓	✓
	6	SS - Austenitic-ferritic (Duplex)	230-260			✓	✓
K	7	Malleable Cast Iron	130-230	✓	✓		✓
	8	Grey Cast Iron	180-245	✓	✓		✓
	9	Nodular Cast iron	160-250	✓	✓		✓
S	11	Heat Resistant Super Alloys	200-320			✓	✓

Good Conditions Average Conditions Difficult Conditions

RECOMMENDED CUTTING CONDITIONS Condições de corte recomendadas | Condiciones de corte recomendables

ISO	PSM	Material	HB (Brinell)	Vc (m/min) ← Wear Resistance — Toughness → PHP910	PHP920	PHH930	PH7740	Feed fz (mm/t) SOEW S...	SOET MS...
P	1	Unalloyed Steel	125-220	180-250	180-250	-	140-200	0,50-2,10	0,50-2,20
	2	Low-Alloyed Steel	220-280	160-240	160-230	-	130-180	0,50-2,10	0,50-2,20
	3	High-Alloyed Steel	280-380	140-230	140-220	-	100-170	0,50-2,00	0,50-1,80
M	4	SS - Ferritic / Martensitic	200-330	-	-	140-210	130-180	-	0,50-1,80
	5	SS - Austenitic	200-330	-	-	120-170	110-160	-	0,50-1,80
	6	SS - Austenitic-ferritic (Duplex)	230-260	-	-	100-150	90-150	-	0,50-1,50
K	7	Malleable Cast Iron	130-230	180-300	160-270	-	140-220	0,50-2,10	0,50-2,00
	8	Grey Cast Iron	180-245	160-250	140-250	-	120-210	0,50-2,10	0,50-2,00
	9	Nodular Cast iron	160-250	150-210	120-210	-	100-190	0,50-2,10	0,50-1,80
S	11	Heat Resistant Super Alloys	200-320	-	-	30-110	30-100	-	0,40-1,30

(Note 1) Cutting conditions $a_e/Dc=70\%$.

(Note 2) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:
- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

(Note 3) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:
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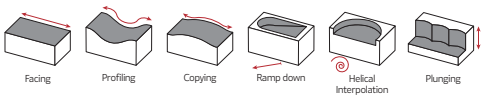
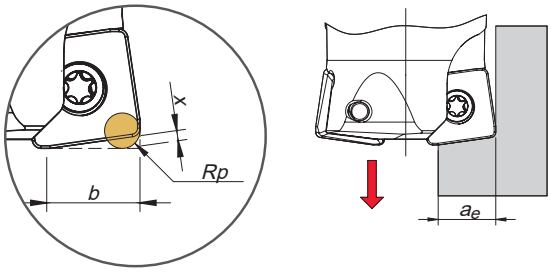


CHIP BREAKER SELECTION GUIDE Guia para aplicações do quebra-aparas | Guía para aplicación del rompevirutas

ISO	PSM	Material	HB (Brinell)	Chip breaker application	
				1st choice	Dificult Operations
P	1	Unalloyed Steel	125-220	SOET 16...	SOEW 16...
	2	Low-Alloyed Steel	220-280	SOEW 16...	-
	3	High-Alloyed Steel	280-380	SOEW 16...	-
M	4	SS - Ferritic / Martensitic	200-330	SOET 16...	-
	5	SS - Austenitic	200-330	SOET 16...	-
	6	SS - Austenitic-ferritic (Duplex)	230-260	SOET 16...	-
K	7	Malleable Cast Iron	130-230	SOET 16...	SOEW 16...
	8	Grey Cast Iron	180-245	SOEW 16...	-
	9	Nodular Cast iron	160-250	SOEW 16...	-
S	11	Heat Resistant Super Alloys	200-320	SOET 16...	-

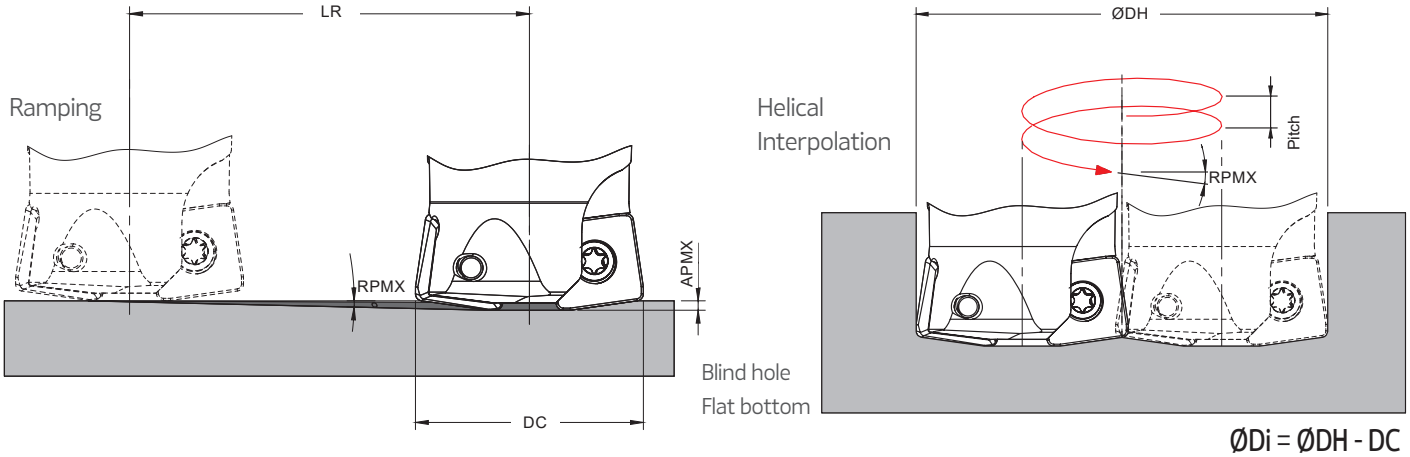
PROGRAMMING DATA Dados para programação | Datos para la programación

Insert	Programming Data			
	Rp	X	b	a_e
SO... 1605..	4,5	2,3	13,5	12,8



RAMPING AND HELICAL INTERPOLATION

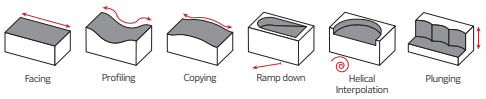
Descida em rampa e interpolação helicoidal | Bajada en rampa e interpolación circular



ØDi = ØDH - DC

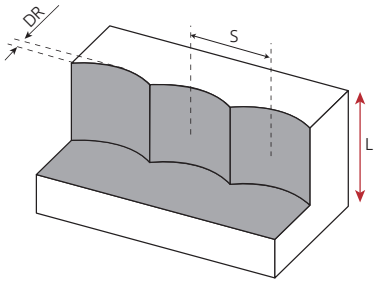
DC	Ramping			Helical Interpolation		
	RPMX	APMX	Min LR	ØDHmin	ØDHmax	Max Pitch/Rev.
63	3,5	3,5	80,2	99,0 -	- 123,6	6 11
66	3,0	3,5	66,8	105 -	- 129,6	6 10
80	2,0	3,5	100,2	133 -	- 157,5	5 8
100	1,5	3,5	133,7	173 -	- 197,5	6 8
125	1,0	3,5	200,5	223 -	- 247,5	5 6
160	0,5	3,5	401,1	293 -	- 317,5	3 4

Note: During helical interpolation do not exceed APMX.



PLUNGING Mergulho | Plunge

L≤3DC	L>3DC	S max.
f_z (mm/t)		
0,10-0,20	0,07-0,14	$Smax = \sqrt{DC.DR-DR^2}$



S max and DR corresponding cutting diameter DC (mm)		
DR (mm)	DC (mm)	
	66	80
1,0	8,1	8,9
2,0	11,3	12,5
3,0	13,7	15,2
4,0	15,7	17,4
5,0	17,5	19,4
6,0	19,0	21,1
7,0	20,3	22,6
8,0	21,5	24,0
9,0	22,6	25,3
10,0	23,7	26,5
11,0	24,6	27,5
12,0	25,5	28,6

Note: Recommended for L ≤ 4 Dc for extra long tool this step and side cut must be reduced.

06410 | 06690 | 06815

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